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ABSTRACT

To help achieve a more dispersed population distribution, it is the strategy of the New Rural Society (NRS) project to address the interdependent rural, urban, and energy problems by solving the rural development problem issue first. People live in large urban areas chiefly because the jobs and essential services are there. Advances in communications technology could make it possible to decentralize business and government employment to rural areas and still maintain direct ties with the urban marketplace via sophisticated, relatively low-cost communications links. This document is divided into six sections: The first presents the basic phenomena that gave rise to the NRS concept. The second section discusses these phenomena in greater detail. The third describes the NRS concept and its approach to rural development. The fourth part deals with the potential impact of population decentralization on domestic energy production and consumption. The fifth presents the overall NRS objectives, and the sixth outlines the program that NRS proposes to undertake in the next few years. (Author/WBC)

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THE NEW RURAL SOCIETY CONCEPT
and
PROGRAM PLAN

Submitted by the
New Rural Society Project
as a
Task Report to the
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THE NEW RURAL SOCIETY

Introduction

The United States is faced with critical urban, rural, and energy problems. The NRS believes that these problems are interdependent and in a large part result from the population imbalance caused by the massive migration from rural to metropolitan areas of the United States over the past half century. This shift of people produced stagnation in many rural communities that had lost population and contributed to the crime, pollution, and congestion problems which now seriously burden many metropolitan areas. At the same time it can be postulated that at present there is no optimal match between the population distribution of this nation and its energy and earth resources. The main objective has to be the dependence on our own resources while maintaining a high quality of life for everyone. The application of modern communication and transportation systems and their combinations could play a significant role in this.

To help achieve a more dispersed population distribution, it is the strategy of the NRS project to address the interdependent rural, urban, and energy problems by solving the rural development problem issue first. Once population decentralization begins, the pressures on the large cities will be reduced and the outcome of the strategy could lead to higher quality of life for urban and rural residents alike.

People live in large urban areas today chiefly because the jobs and essential services are there. Given the opportunity, many families would prefer to live in rural communities. Advances in communications technology could make it possible to decentralize business and government employment to rural areas and still maintain direct ties with the urban market-place via sophisticated, relatively low-cost communications links. Imaginatively applied telecommunications can also help improve the health services, educational opportunities and cultural life of small towns. Through these means people will be able to live in the environment of their choice while still enjoying the job opportunities and essential services that are important to them.

This document is divided into six sections: The first presents the basic phenomena that gave rise to the NRS concept. The second section discusses these phenomena in greater detail. The third section describes the NRS concept and its approach to rural development. The fourth part deals with the potential impact of population decentralization on domestic energy production and consumption. The fifth section presents the overall NRS objectives and the sixth section outlines the program that NRS proposes to undertake in the next few years in working towards its indicated objectives.

I. Unbalanced Population Distribution

Nearly 75 percent of Americans live in metropolitan areas. These areas typically represent large population concentrations because they encompass a central city as well as adjacent counties and communities which are economically and socially integrally linked to one another. The remainder of the U.S. population--some 55 million--is scattered among the small towns and farms of rural America. During the 1960's, the total metropolitan population expanded by 26 million. During that same period, the national population grew by 24 million. Of those who dwell within the boundaries of so-called metropolitan areas,[1] only 40 percent of the white inhabitants actually reside in a central city as opposed to 78 percent of the blacks. (See Table 1, page 4). The rest live in the suburban communities contiguous

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[1] The definition of a Standard Metropolitan Statistical Area (SMSA) has undergone several modifications since it was first issued by the Bureau of the Budget in 1949. Current criteria, adopted in November 1971, provide that each SMSA must include at least:

> a) one city with 50,000 or more inhabitants, or
> b) a city having a population of at least 25,000 which with the addition of the population of contiguous places, incorporated or unincorporated, having a population density of at least 1,000 persons per square mile, and which together constitute, for general social and economic purposes, a single community with a combined population of at least 50,000, provided that the county or counties in which the city and contiguous places are located have a total population of at least 75,000. (In New England, the cities and towns qualifying for inclusion in an SMSA must have a total population of at least 75,000.)

In addition, the government criteria require that the SMSA include the county in which the central city is located and any other adjacent counties that are judged to be integrated economically and socially with the county of the central city.

TABLE 1

Population, by Residence and Race: 1950 to 1970

(In thousands, except percent. As of April. Refers to 243 standard metropolitan statistical areas as defined in 1970 census publications; see text, section A4. Minus sign (−) denotes decrease)

Residence and race	Population				Percent change		Average annual change	
	1950	1960	1970		1950–1960	1960–1970	1950–1960	1960–1970
			Total	Percent				
Total	151,326	179,323	203,212	100.0	18.5	13.3	1.7	1.3
Standard metropolitan statistical areas	84,572	112,775	139,419	68.6	78.6	16.6	2.3	1.5
Central cities	52,676	57,747	63,777	31.4	11.6	6.4	1.1	0.6
Outside central cities	43,362	21,645	75,642	37.2	43.9	28.8	3.6	2.4
Nonmetropolitan areas	66,747	66,728	63,793	31.4	0.3	4.4	0.3	0.7
White	135,150	158,822	177,749	100.0	17.5	11.9	1.6	1.1
Standard metropolitan statistical areas	75,009	103,573	129,578	67.8	28.6	13.0	2.1	1.4
Central cities	43,731	47,413	47,420	27.5	8.7	.01	0.9	−0.1
Outside central cities	31,278	56,414	71,165	40.0	45.3	26.1	3.8	2.6
Nonmetropolitan areas	60,141	55,249	48,170	32.2	−8.2	−7.3	0.7	0.9
Negro	14,972	18,872	22,580	100.0	26.5	19.7	2.3	1.9
Standard metropolitan statistical areas	8,592	12,741	15,771	76.3	48.6	31.9	3.8	2.8
Central cities	6,965	9,574	12,747	56.2	37.4	33.1	3.1	2.8
Outside central cities	2,542	3,168	3,023	13.1	24.7	−4.6	2.1	2.8
Nonmetropolitan areas	6,380	6,131	6,810	23.7	−3.9	+11.1	−0.4	+1.1

Z Less than 0.05 percent. ¹ See footnote 1, table 1.

Source: U.S. Bureau of the Census, *U.S. Census of Population: 1960* and *1970*, vol. I.

to the core city. As for the non-metropolitan population, only a small percentage of them--4.5 percent in 1973--can be found actually working the land. The remaining 20 percent who reside in rural America earn their livelihood in other ways. Superimposing these population patterns upon a map of the United States reveals one of the impacts that centralization has had on this country. Seventy-five percent of the inhabitants are now concentrated on a mere 14 percent of the land area. (See Tables 2 and 3, page 6.) Moreover this lopsided population distribution has adversely affected many American cities, suburbs, and towns.

A. Impact on Large Cities

Some of this country's oldest cities are experiencing decline with little hope of reversing their downward course. They have been losing skilled middle-income residents to the suburbs ringing the city periphery at a rapid pace for the last two decades. They have watched industries abandon them for suburban sites. They have been forced to commit an ever larger percentage of their municipal budget to social services for the poor, unskilled, and elderly. They have had to cope with the pollution that accompanies the daily inflow and outflow of thousands of automobile commuters from outlying communities. They have had to try to deal with increasing violence and crime that is by no means exclusive to the city, but perhaps more pervasive there. All this the cities are being required to accomplish on an ever dwindling tax base.

TABLE 2.

Nonmetropolitan Population and Land Area at Specified Dates: 1940 to 1970

(The differences in population shown here for each census year for the applicable columns of the table must correspond with net changes in nonmetropolitan population as the SMSA's are defined. The difference in population for each area between two censuses, or between the most recent census and a postcensal estimate, reflects changes in the SMSA's as well as changes in the nonmetropolitan population. The changes in land area, also shown between censuses, reflect changes in the SMSA's. All areas include Alaska and Hawaii and exclude Puerto Rico. Boundaries of cities and towns in each area are those in effect on January 1, 1970. Land area figures are as of January 1, 1970, and thus reflect changes in land area occurring up to 1970)

NONMETROPOLITAN POPULATION AS OF—	POPULATION				Land area (sq. mi.) 1970
	1940	1950	1960	1970	
1930 census (Mar. 1937)	53,870,330	54,472,678	72,873,427	81,870,249	2,201,241
1940 census (Nov. 1940)	53,227,016	52,409,575	66,458,029	72,247,709	2,207,173
1948 (July 1)	57,250,134	53,961,512	62,645,332	68,812,883	2,157,275
1949 (July 1)	57,776,413	53,615,812	62,157,971	68,206,258	2,156,203
1950 census (Feb. 28, 1950)	58,307,748	54,233,478	61,751,677	67,711,111	2,140,124
1960 (Apr. 1)	58,356,713	54,512,963	59,726,078	65,370,076	2,124,358
1970 (Apr. 1)	59,005,327	54,944,854	59,532,014	65,157,163	2,047,921
1974 (July 1)	59,131,032	54,158,131	57,709,163	63,260,423	2,045,727

TABLE 3.

Percent of Total U.S. Population and Land Area Inside SMSA's as Defined at Specified Dates: 1940 to 1970

PERCENT AS OF—	POPULATION				Land area (sq. mi.) 1970
	1940	1950	1960	1970	
1930 census (Mar. 1937)	53.4	56.1	59.3	60.1	6.9
1940 census (Nov. 1940)	53.4	55.0	53.0	54.4	6.8
1948 (July 1)	56.6	60.5	64.6	66.3	9.9
1949 (July 1)	57.5	61.9	66.0	67.9	10.7
1950 census (Feb. 28, 1950)	58.4	63.5	66.7	68.5	11.0
1960 (Apr. 1)	54.6	59.4	65.4	70.5	11.7
1970 (Apr. 1)	52.9	56.1	70.0	72.5	13.8
1974 (April 1)	53.1	56.2	72.5	73.2	15.9

Source for tables B and C: U.S. Bureau of the Census, *U.S. Census of Population: 1940; 1950; 1960; and 1970*; vol. 1.

B. Impact on Suburbs

The rapid exodus of central city families to suburbia in recent years has led to unplanned development. Most central cities are now ringed by a series of suburbs that reflect the outward migration of population over decades. Those communities in the first ring are generally the oldest, while those most distant from the inner city, the newest. Extravagant land use practices have produced development after development with single family homes on one acre lots. Frequently, however, there may be no public green space between the central city municipal park and the outermost boundary of a metropolitan area. Because of strict zoning ordinances, the "instant" communities created by the huge post World War II real estate developers tend to be homogeneous in race and class terms--confined to the middle and upper income families. Minority groups and lower-income families commonly have difficulty finding homes in suburbia. Shopping centers strung out along major highways satisfy the consumer needs of suburbanites but are poor substitutes for the main street or village green when it comes to fostering a sense of community.

C. Impact on Rural Towns

Outmigration has left many rural communities in non-metropolitan counties to stagnate. Their younger, more educated residents have tended to move to the metropolitan areas which offer better jobs and more opportunities to satisfy their life-style preferences. Those who choose to remain behind face bleak prospects in the future. Of the 27 million low-income

people in this country, 40 percent live in rural areas, making the incidence of poverty in rural areas more than double that of even urban areas.

As agricultural employment opportunities have declined, rural communities have lacked the resources to attract new employers. As of 1970, two-thirds of the homes in rural America were substandard. Water and sewer systems in rural communities frequently do not meet new federal water quality standards. Funds for improving these systems cannot be easily raised, however, by further taxing a disproportionately poor, elderly population. Grossly deficient transportation services into and from many rural communities may act to deter new industry or families from locating there. A shortage of health care professionals and poor delivery systems mean that the rural community resident often lacks access to adequate medical services.

What may finally alter the downward course of many rural communities is the growing concern for the need to plan the use of America's energy and land resources--a problem that in part can be traced back to the rapid metropolitanization of the country due to rural migration.

II. Discussion of the Effects of Rapid Urbanization

1. Migration from rural communities to metropolitan areas over the last 50 years has produced an undesirable population imbalance. The concentration of three-quarters of the U.S. population in metropolitan areas places a severe strain on public services, transportation systems, energy sources (electric and oil), and recreational facilities. Often the spatial organization of business activity and residential neighborhoods requires SMSA inhabitants to commute substantial distances to work. This results in the use of more gas and the generation of more pollutants. For almost always, the private automobile is the preferred means of transportation to work. (see Table 4, page 10).

2. Economic and job-related considerations have been the primary determinants of migration. The mechanization of agriculture during this century increased the productivity of capital relative to other resources, with the result that capital was substituted increasingly for labor.[2] This led to a reduction of jobs in rural areas which were dominated by natural resource-based industries. The situation was exacerbated by high fertility--the fact

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[2] T. W. Schultz, The Economic Organization of Agriculture (New York: McGraw-Hill, 1953).

TABLE 4.

MEANS OF TRANSPORTATION TO WORK, BY RESIDENCE: 1970

[In thousands of workers 16 years old and over, except percent. Based on a 15 percent sample]

MEANS OF TRANSPORTATION	Total population	Urban	Rural	WORKERS LIVING IN SMSA'S OF 250,000+				
				Total [1]	Living and working in same SMSA			Working outside SMSA of residence
					Total	Working—		
						In central cities	Outside central cities	
Total	193,561	140,535	52,960	47,222	46,816	23,915	17,771	2,141
Private automobile	89,722	44,533	11,548	34,151	31,422	16,438	14,266	1,798
Driver	80,675	56,133	12,542	31,653	28,992	13,999	12,961	1,597
Percent of total private	84.9	85.1	84.4	88.5	88.5	88.5	88.5	87.2
Passenger	9,046	6,732	2,327	5,161	4,460	2,438	2,022	224
Bus or streetcar	4,215	4,119	229	3,547	3,214	2,676	346	110
Subway or elevated train	1,782	1,782	6	1,747	1,459	1,155	31	31
Railroad	1,060	1,048	1,143	2,973	2,903	1,970	1,302	56
Worked at home	2,983	1,952	1,934	999	824	312	538	13
Other means [2]	2,743	1,927	815	1,474	1,191	748	645	137

[1] Includes those persons for whom place of work was not reported. [2] Includes railroad and taxicab.

Source: U.S. Bureau of the Census, *U.S. Censuses of Population: 1970, General Social and Economic Characteristics*, final report, PC(1)-C1, *United States Summary*, and *Journey to Work*, PC(2)-6D, Subject Reports.

that rural families produced substantially more offspring than were needed for generational replacement.[3] Meanwhile non-farm industries in urban areas were expanding rapidly and required additional manpower. Thus faced with unemployment or underemployment, many rural residents responded to the demand for labor by urban non-farm industries which offered superior occupational opportunities.

From an economic standpoint, migration from a rural to an urban area has often proved rewarding.[4] Disadvantaged blacks, in particular, have improved their circumstances markedly through such migration.

3. Outmigration has left many rural communities economically stagnant, a situation that is only compounded by the fact that migration tends to be adversely selective. Those who leave rural communities first tend to be the younger, better-educated residents. These are precisely the individuals with the greatest income-producing potential and the occupational skills that industry seeks.

Outmigration reinforces economic stagnation to the extent that those rural communities that are so affected usually find it increasingly difficult to develop the infrastructure that would make them attractive to prospective industry. In many sections of the country, rural community residents are

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[3] Peter A. Morrison, "Urban Growth and Decline in the United States: A Study of Migration's Effects in Two Cities," Rand Paper - 5234, May 1974, pp. 5-6.

[4] Peter A. Morrison, "How Population Movements Shape National Growth," Rand Paper - 5007, May 1973, pp. 5-6.

overaged and undereducated relative to urban dwellers. Even though people in rural areas spend about the same percentage of their incomes underwriting government services as those in metropolitan areas, in dollar terms the expenditure tends to be far lower because the average rural family earns less than an urban family. (See Table 5 below) Moreover, the assessed value of taxable property in nonmetropolitan areas is generally lower on a per capita basis than in metropolitan areas. To make matters worse, as Table 5 indicates, the taxable property value per capita declined outside metropolitan areas between 1961 and 1971. This means that many rural governments are finding that their limited revenues simply will not stretch far enough to furnish their residents with services of comparable quality to those found in urban areas.

Table 5

Per Capita Amounts of Taxable Property Assessed Value in Metro and Nonmetro Counties, by Region, 1961 and 1971

Region	1961			1971		
	Metro-politan	Nonmetro-politan	%*	Metro-politan	Nonmetro-politan	%
	Dollars			Dollars		
U.S.	2,046	1,831	89	3,618	2,971	82
Northeast	2,215	1,753	79	3,872	2,853	74
North Central	2,384	2,560	107	3,599	3,357	93
South	1,648	1,272	77	3,654	2,501	68
West	1,768	2,117	120	3,229	3,886	120

*% refers to the 1961 and 1971 taxable property value per capita outside metro areas, expressed as a percentage of taxable property value per capita inside such areas.

Source: U.S. Census of Governments.

4. Migration among metropolitan areas rather than from the country to the city, has become the principal determinant of urban growth. Americans are a highly mobile people. Nearly 20 percent of the population moves each year. In the past people moved from rural communities to metropolitan areas. Most migration today can more accurately be characterized as an exchange of persons among urban areas rather than as an enduring shift of population from one area to another.[5]

As Table 6 (page 14) shows, roughly 64 percent of the Americans who moved in 1973 were urban dwellers moving to a new urban location. Approximately three-fourths of those moved within the same metropolitan region, and the remaining one fourth moved to a different urban area.

Rural-urban migration has been declining of late. In fact, the most recent census figures indicate that the population of rural communities in most regions of the United States is increasing more rapidly than that of metropolitan areas. This represents a significant turnaround insofar as less than a decade ago the reverse was true.

5. Rural communities in America have traditionally been service- rather than residential-oriented, but there has been a reversal in many towns of late as the business function has declined while the housing function function has not. The idealized view of the

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[5] Peter A. Morrison, "How Population Movements Shape National Growth," Rand Paper - 5007, May 1973, p. 13.

highly integrated rural community of an earlier age does not fit the American experience. The classic "Gemeinschaft" community described by Tonnies[6] was one wherein people lived close to one another, knew each other well, and worked together. "Mutual furtherance and affirmation" predominated. In the United States, such intense social solidarity was not easily attainable given the pattern of settlement that predominated in this country.

Table 6.

MOBILITY STATUS OF THE POPULATION, BY RACE AND SEX: 1970–1973

[In thousands of persons 3 years old and over. Based on Current Population Survey. Includes members of the Armed Forces living off post or with their families on post, but excludes all other members of the Armed Forces; see text, p. 1. Data for 243 SMSA's as defined in 1970 census publications; see text, section 34. See also *Historical Statistics, Colonial Times to 1957*, Series C 95-97]

CHARACTERISTICS	Total population in 1973 [1]	Same house (non-movers) in 1972 and 1973	DIFFERENT HOUSE IN U.S. IN 1972 (MOVERS)					
			Total	Within same SMSA	Between SMSA's	From outside SMSA's to SMSA's	From SMSA's to outside SMSA's	Outside U.S. in 1972 and 1973
Total, population	194,032	152,815	32,259	23,640	5,671	3,736	4,659	10,212
Percent	100.0	78.8	16.6	12.1	2.9	1.9	2.4	5.3
White	164,213	109,538	26,561	19,617	5,102	3,405	4,425	10,913
Percent	100.0	84.0	20.3	15.0	3.9	2.6	3.4	8.3
Negro	21,497	13,973	6,752	4,435	568	283	155	1,287
Percent	100.0	64.2	31.1	20.4	2.7	1.3	0.9	5.9
Male	94,736	69,921	20,109	14,212	4,425	1,773	2,253	7,158
Percent	100.0	73.3	21.0	15.0	4.7	1.9	2.4	7.9
Female	101,295	82,894	12,150	9,428	1,246	1,963	2,406	3,054
Percent	100.0	81.8	12.0	9.3	1.2	1.9	2.4	3.0

[1] Includes those abroad on March 1, 1973, and those with no report on residence in 1972, not shown separately.

Source: U.S. Bureau of the Census, *Current Population Reports*, series P-20.

[6] Ferdinand Tonnies, Community and Society, edited and translated by Charles P. Loomis (New York: Harper Torchbook, 1957), p. 44.

The settlement pattern was one of dispersion rather than proximity. Rural families lived on isolated homesteads. They relied upon skilled craftsmen in the towns to make the vital machinery. It was difficult to identify a farming family with any one community, because the family might typically have shopped in one town, worshipped in another and sent the children to school in still another. In America the farmer's contacts were "segmented rather than holistic. . .individuated--more so, perhaps than any other part of the population."[7]

This old agrarian society disappeared with industrialization. It produced jobs which helped draw millions of farmers and craftsmen from rural communities to the cities during the first half of this century. Now there is evidence, however, that some of their progeny are choosing to return to the small towns.

Rural communities outside the metropolitan areas have of late been gaining population or at least holding their own. Though they may have lost their business facilities, many have been attracting "second home" owners, retired people eager to escape the cities, and employees of manufacturing industries in nearby small towns. While the exact increase in

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[7] Jessie Bernard, The Sociology of Community (Glenview, Ill.: Scott, Foresman & Company, 1973), p. 95.

occupied housing in rural towns of 1,000 or more is not available, it is estimated to have risen by at least 14 percent between 1940 and 1970.[8]

6. A large proportion of rural community residents commute to jobs in another county, so a stable population is not a reliable indicator of a small town's vitality.

In recent years, manufacturing has moved into rural counties. It has been encouraged to some extent by the development of interstate highway systems which have facilitated the transportation of both goods and labor. Workers who have filled the newly created jobs in rural areas, however, frequently do not live in the town where they are employed. Approximately 24 percent of all rural workers--town and country alike--commuted to work in another county in 1970.

7. Residents of nonmetropolitan cities of 10,000 to 50,000 population are the least likely to commute to work. Census data show that no type of settlement in our society is as self-contained as the some 1,500 cities in the 10,000 to 50,000 population range. People who live in cities in this

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[8] Calvin L. Beale, Rural Development: Population and Settlement Prospects," Journal of Soil and Water Conservation (Jan-Feb, 1974), Vol. 29, p. 25.

size range do far less intercounty job commuting than either metropolitan area residents or farmers.

8. Rural America cannot be termed in a universal state of decline, for the situation is very uneven. Some regions are stagnating while others are experiencing sizable growth. Most declines appear to be occurring in the Great Plains, western Corn Belt, southern Appalachian coal areas, and the old Cotton Belt of the Southern Coastal Plain.[9] Meanwhile the rural population elsewhere is expanding. "Between the metropolitan areas of the Lower Great Lakes and the Northeast, in the Far West, the Florida Peninsula and the textile areas of the Southern Piedmont," in particular, considerable growth has taken place.[10]

In general those regions (See Table 7, page18) suffering severe declines have been especially hurt by new labor saving farm practices and adjustments in coal mining procedures which have reduced employment opportunities faster than new employment opportunities were created. Poor prospects for employment thus prompted many inhabitants to migrate. As a consequence, the rural population in these four declining regions dropped 30 percent between 1940 and 1970.[11]

Meanwhile the five other rural areas cited in Table 7, which together enjoyed a 44 percent population increase during this same period, tended to

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[9] Ibid., p. 23. [10] Ibid. [11] Ibid.

be regions that did not rely heavily upon extractive industries. Also, some boasted favorable climates and proximity to major metropolitan centers.[12]

TABLE 7.

Rural population change in selected areas of substantial decline or growth, 1940-70.

Area	Rural Population (thousands) 1970	1940	Percentage Change, 1940-70
Declining areas—total	10,502	15,012	−30.0
Great Plains	2,412	3,530	−31.8
Western Corn Belt	2,830	3,648	−22.6
Southern Coastal Plain Cotton Belt	3,548	5,644	−38.0
Southern Appalachian Coal Fields	1,721	2,283	−24.8
Growing areas—total	14,023	9,727	44.2
Pacific Coast and Southwest	1,614	1,112	45.0
Lower Great Lakes	5,369	3,824	40.4
Northeastern Coast	3,877	2,479	56.4
Southern Textile Piedmont	2,400	1,989	21.0
Florida Peninsula	758	323	134.3

Source: U. S. Censuses of Population.

9. The large shift of population to the suburbs has made it difficult for central cities to cope with the rising public service costs that this population restructuring has implied. Many American central cities experienced a radical population restructuring during the 1960s. They lost large numbers of their higher income white residents to the suburbs and were left with a larger proportion of disadvantaged families--both white and black. Problems of poverty, dependency and ill health have intensified in central cities as the composition of their populations has changed. And the cities

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[12] Ibid., p. 24.

are less able to cope with these problems because their tax base has been eroded by the outmigration of industries and higher income families.

10. While no area is untouched by crime, the population groups with the highest propensities to commit crime reside in the central cities. The fear of violence has been driving increasing numbers of city dwellers to exurbia in search of a more tranquil, safer environment.

Regardless of where people live, America is rank crime as a major domestic concern. National statistics show an upsurge in serious crime, particularly in the larger cities. (See Table 8 and Table 9, page 20). The poor, the unemployed, the drug addicts--in sum, the population groups with the highest propensities to commit crime--tend to live in the nation's central cities. Municipal governments, being strapped for funds, cannot afford to recruit and train enough law enforcement officials. Meanwhile urban crime rates continue to climb, and increasing numbers of central city families migrate to suburbia.

11. The dearth of low cost housing in suburbia places ownership of a home in these communities outside the grasp of increasing numbers of Americans. Suburban residential communities have long used zoning ordinances to discriminate against the low-income family. Many towns make it difficult to get a variance to build other than one-family homes on relatively large lots. By adopting this stance, the local government can effectively exclude anyone not in the upper income range.

TABLE 8.

Crime Rates for Violent Crimes in Cities, by Size Group and for Selected Cities: 1960 to 1973

(Offenses known to the police per 100,000 population. For definitions of violent crime, see footnotes, table 243. Rates based on Bureau of the Census population estimates as of July 1 of each year)

ITEM	1960	1965	1967	1968	1969	1970	1971	1972	1973
Cities with population of—									
250,000 or more	373.7	409.8	525.4	573.2	652.7	750.4	1,017.5	975.6	1,003.4
100,000–249,999	154.9	211.7	297.9	323.3	385.2	450.3	561.3	501.3	545.0
50,000–99,999	104.4	145.4	184.7	200.3	244.9	273.5	292.9	322.3	371.5
25,000–49,999	70.1	113.9	141.0	150.6	173.0	214.4	245.1	267.3	245.2
10,000–24,999	57.3	93.2	115.3	126.6	123.7	139.2	157.7	170.8	223.7
Under 10,000	47.7	50.8	68.4	111.4	108.6	141.4	170.6	204.9	122.0
Selected cities:									
New York, N.Y.	262.0	344.5	765.5	1,062.2	1,199.0	1,350.5	1,610.8	1,574.7	1,453.0
Chicago, Ill.	617.9	760.0	908.5	930.7	1,028.2	1,191.3	1,122.2	1,104.4	1,148.1
Los Angeles, Calif.	479.9	654.2	810.5	952.1	1,096.7	1,[illegible]	1,[illegible]	1,[illegible]	1,064.4
Philadelphia, Pa.	256.3	356.2	326.9	421.5	455.2	521.1	1,[illegible]	1,[illegible]	754.9
Detroit, Mich.	567.7	613.5	1,074.5	1,213.7	1,456.8	1,634.1	1,813.0	1,653.2	1,650.8
Houston, Tex.	307.7	373.1	503.7	594.5	638.3	773.2	714.6	637.2	655.5
Baltimore, Md.	331.9	518.6	1,[illegible]	2,018.9	2,[illegible]	2,[illegible]	1,543.5	1,[illegible]	1,770.9
Dallas, Tex.	247.3	256.1	413.7	467.1	641.7	766.0	1,091.3	918.0	998.1
Washington, D.C.	553.7	732.5	1,143.8	1,564.5	2,155.1	2,[illegible]	2,[illegible]	1,[illegible]	1,[illegible]
Cleveland, Ohio	277.5	503.2	627.9	650.3	1,015.9	1,060.2	1,169.6	1,[illegible]	1,[illegible]
Indianapolis, Ind.	153.3	140.1	342.6	376.0	426.7	452.3	445.5	1,[illegible]	1,[illegible]
Milwaukee, Wis.	95.2	95.2	167.5	224.8	192.6	210.3	202.1	209.8	234.4
San Francisco, Calif.	402.5	542.5	964.5	1,[illegible]	1,[illegible]	1,[illegible]	1,[illegible]	1,[illegible]	1,[illegible]
San Diego, Calif.	129.4	141.3	145.7	221.0	219.9	253.2	294.7	323.2	372.2
San Antonio, Tex.	176.6	271.8	304.2	353.0	437.1	476.7	492.2	509.5	587.1

Source: U.S. Federal Bureau of Investigation, *Uniform Crime Reports for the United States, 1973.*

TABLE 9.

Crime Rates, by Type—Population Groups: 1972

(Offenses known to the police per 100,000 population. For definitions of crimes, see footnotes, table 243. Population as of 1972 as estimated by FBI)

ITEM	Total[1]	VIOLENT CRIME					PROPERTY CRIME			
		Total	Murder	Forcible rape	Robbery	Aggravated assault	Total	Burglary—breaking or entering	Larceny—theft (except auto theft)	Auto theft
POPULATION GROUP[2]										
Total, 7,937 agencies	4,072	473	9.2	31	202	194	3,769	1,293	2,103	483
Total, 5,851 cities	5,077	535	10.7	37	272	229	4,535	1,509	2,581	574
29 cities, 250 000 or more	6,202	959	19.7	47	579	333	5,429	1,673	2,653	947
56 cities, 100,000–249,999	5,056	602	10.7	37	319	246	4,640	1,708	3,054	647
256 cities, 50,000–99,999	4,779	572	6.2	19	232	163	4,453	1,253	2,720	480
481 cities, 25,000–49,999	4,197	397	5.1	13	102	145	3,927	1,064	2,472	389
1,219 cities, 10,000–24,999	3,589	296	4.1	12	58	129	3,368	991	2,219	244
3,972 cities, less than 10,000	3,201	234	3.8	12	48	143	2,935	787	2,003	293
Suburbs, 2,707 agencies[3]	3,273	332	4.6	17	72	125	3,063	963	1,817	258
Rural areas, 1,819 agencies	1,431	129	4.2	11	18	95	1,729	338	647	73

[1] Includes manslaughter by negligence, not shown separately.
[2] Population group data include, and selected city data exclude, larceny under $50.

Source: U.S. Federal Bureau of Investigation, *Uniform Crime Reports for the United States, 1972.*

Noteworthy in this regard is a recent study which shows that the median price of one-family homes in the New York region is today well in excess of $40,000--which means that 85 percent of the region's families could not afford the median house.[13] Elsewhere in the United States, the same holds true. This means that the mass migration to suburbia from the cities may be coming to an end.

Should mortgage money remain tight and interest rates high, over the next few years, small towns outside the metropolitan area could attract new residents. Young families who cannot afford suburbia but dislike urban apartment-house living, may be encouraged to move to a rural community that offers them an opportunity both to earn a living and enjoy the life style they prefer.

12. The high cost of oil suggests that efforts to stabilize U.S. energy consumption and redirect future growth of energy supplies toward decentralized systems could be very advantageous. A gradual reduction of the energy consumption growth rate need not imply economic hardship.[14] Actually higher energy prices could possibly lead to the substitution of labor for energy in certain economic activities, resulting in increased employment.

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[13] Robert N. Rickles, "Suburbia Isn't What It Used To Be," The New York Times, January 6, 1975.

[14] A Time to Choose--America's Energy Future, Energy Policy Project of the Ford Foundation (Cambridge: Ballinger Publishing Co., 1974), pp. 88-93.

Small community energy systems presumably could be partly fueled with organic wastes from municipal refuse and therefore less dependent upon oil than a central power plant. Coal might also be used, assuming that there were suitable controls which ensured the meeting of clean air standards.

Extensive centralization of our energy supplies has meant heavy reliance on oil. This places the country in a vulnerable political position, internationally. Centralization also makes the consequences of a technical failure, such as the Northeast blackout, much more disruptive than would be the case if the system were decentralized.

4). The majority of Americans favor the regulation of population and industrial growth in the areas where they live. A 1974 national survey of a representative sample of the American population revealed that some 54 percent of the people favor government regulation of industrial and population growth in their area, 37 percent oppose it, and 9 percent have no opinion.[15] Those who support regulation generally tend to be younger and better educated than the opposition. Urban dwellers were far more inclined to support regulation than residents of small communities. And citizens of towns under 2,500 were strongly opposed to regulation.

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[15]William Watts and Lloyd Free, State of the Nation 1974 (New York: Potomac Associates/Harper, 1974), p. 332.

14. Despite increased activity in the extractive industries, rural community residents will continue to depend essentially upon manufacturing and service industries for sources of work. The ongoing drive to expand domestic production of energy, foodstuffs, and timber will produce some new employment opportunities in the rural extractive industries. However these industries are no longer as labor intensive as they once were, and continuing advances in labor-saving techniques will reduce their need for manpower.

In 1970, only 15 percent of the employed rural population was engaged directly in the extractive industries (agriculture, mining, or wood industries), as compared with 52 percent in 1940. The 1960's was the time when many manufacturing plants decided to move to rural locations. Thus by the end of the decade, the growth rate of manufacturing employment in nonmetropolitan counties exceeded that in metropolitan areas.[16] The 1960's also witnessed the rapid development of the second home industry. It was fostered in part by two federally supported programs, namely, the interstate highway program and the dam construction program, which created a number of sizeable reservoirs around the country. The result was that many hitherto isolated rural regions became popular areas to which people retired or escaped on the weekend. This in turn created new work alternatives in the recreation industry for rural residents.

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[16] Beale, "Rural Development: Population and Settlement Prospects," p. 28.

15. New types of businesses and industries for whom closeness to markets does not rank as a primary concern can be attracted to rural communities. For example, research and development work has become an important industry since World War II. Such operations have no particular requirement to be located in a central city. As the success of these firms hinges on their creative professionals, they tend to be perhaps unusually sensitive to the perceived preferences of their personnel. Many of these organizations located in a rural area because they assumed that their professionals preferred such an environment and because the nature of their business did not oblige them to rent high-price central city office space in order to have direct access to markets.

16. Many staff and clerical jobs have moved out of U.S. central cities over the last 20 years as corporations have concluded that it was more economic to house certain jobs away from headquarters. Departments such as accounting, research and development, and computer operations have been among the first to move. The lure of lower taxes, better manpower, reduced operating costs and minimal security problems have fed this trend toward decentralization. Though many companies have their headquarters in the central city, the transfer of some operations to suburban sites has served to cut costs substantially by reducing the amount of office space leased within the city.

17. Dispersion of jobs to satellite centers in small communities outside the metropolitan area can reduce travel time and hence the demand for new transport facilities. The satellite office concept permits employees of a organization to report to work in the center nearest their residence. Assuming that the housing supply around such a center is adequate, the time that employees spend commuting to and from their work will decline. People who work near their homes place less of a burden on transit facilities. Thus governments will be less pressured to spend an ever increasing proportion of their budgets on additional freeways and transit lines. This means that public monies which, without job decentralization, might have been invested in upgrading commuter links will now be available for other important public projects.

18. Substantial reduction of the population densities in metropolitan areas will not be achieved through the creation of new towns. The U.S. Department of Housing and Urban Development (HUD) recently abandoned its new town program. The economic costs of new towns proved too high, especially in the early development years. Unlike existing towns which already had a basic infrastructure upon which they could expand, the new towns created by HUD were obliged to construct new public schools, roads, and utility systems simultaneously at the outset.

Yet another problem of many new towns is that they have had difficulty attracting heterogeneous populations. In terms of age, especially, new towns often are dominated by a specific age group--for example, young families with school-age children. The new town is therefore obliged to deal with the so-called "wave effect," that is "caused by a population dominated by a particular age group" and which leads "to a large group of similarly aged children enrolling in a school system at about the same time."[17] Also, many new towns which originally tried to build heterogeneous communities have succumbed to current economic pressures. High development costs have reduced efforts to provide housing for low-income families in new towns.

19. Unplanned urban sprawl has been continuing apace since World War II with the result that all too little public or private land (excluding backyards) is being dedicated to open space. Residents of this country's high density areas who set out in search of open space and wilderness for recreation within reasonable proximity of their homes, are finding that the supply of "country" land is limited. Farsighted environmentalists and planners in metropolitan areas have long urged local governing bodies to preserve available open space for public use. But all too often plans for alternating open space with

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[17] E. S. Lee, J. C. Bresee, K. P. Welson, and D. A. Patterson, An Introduction to Urban Decentralization (Oak Ridge: Oak Ridge National Laboratory, (1971), p. 59.

urban satellite clusters have been endorsed by a county board of supervisors and then rejected by the same board later because it has succumbed to development fever.[18]

The government needs to adopt a land use policy if open space is to remain readily available to the metropolitan area resident--especially in the East. The state of Connecticut is a case in point.[19] Between 1959 and 1972 ---slightly more than a decade---the state lost half of its farms. The fact that land values have climbed 100 percent since 1967 has been partly responsible for the disappearance of Connecticut farms. Also farm profits have declined during this period due to rising operational costs and the relative stability of federally regulated consumer prices. Thus many families have had to sacrifice their farms. Those who live close enough to a suburban center to have their land zoned for residential or commercial development have been particularly vulnerable.

With the disappearance of farms, the state's open space has also vanished. It is estimated that by the year 2000, some 600,000 people will be seeking to use Connecticut's open space for recreation, hiking and camping. Given the rapid rate at which the state's agricultural industry is presently dwindling, very little open space may remain by the year 2000.

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[18] "Suburban Growth--A Case Study," Population Bulletin (Washington: Population Reference Bureau, 1972), pp. 2-30.

[19] "Agriculture in Connecticut," The Connecticut Conservation Reporter, Vol. 7 (August-September 1974), pp. 1-8.

20. An increased migration of metropolitan area residents to existing small communities, as opposed to new towns or suburban developments, could help preserve valuable open land. Careful planning now to ensure the availability of open lands would mean less pollution, more recreational opportunities and fewer water supply problems in the future.

Many cities depend upon agricultural land to absorb and utilize wastes. With less open land, more sewage treatment centers would have to be built. The nutrient-laden effluent that these plants deposit in lakes and rivers contributes to the excessive growth of algae and weed which can eventually choke these water bodies.

Yet another advantage of agricultural lands is that they trap air pollutants, such as ozone and sulfur dioxide. Research has shown that one acre of vegetation will trap the ozone from 8 automobiles, or the carbon monoxide from 50. [20]

Above all, open space helps maintain the hydrologic cycle which assures people an adequate water supply for all their activities. The open-lands absorb the precipitation and transfer it via the ground water system to neighboring lakes, streams and ponds. If an area's watershed is based on agricultural acreage and that land is sold for development purposes which destroy the open space, this will jeopardize the water supply of

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[20] Ibid.

all communities in the region. Towns that outgrow their local water supplies typically must either arrange to have water piped to them from distant sources or build expensive, new water reservoirs.

Thus the need to control pollution and preserve open space show the megalopolitan configuration to be very unsatisfactory. The best way to overcome this, it appears, is to slow the growth of metropolises by stemming in-migration and to simultaneously encourage present urban area residents to move to rural communities. For this approach to succeed, however, measures first must be taken to create an attractive working and living environment in small communities that lie outside the major metropolitan area.

III. The NRS Concept and Its Approach to Rural Development

Where Americans will live in the decades to come should be a central concern of the federal government. The bulk of the population is likely to continue to concentrate in a few metropolitan areas unless explicit efforts are made to influence the country's population distribution. To change this population growth pattern, real options need to be developed for the people. The fact that existing rural communities provide ample open space is not enough to attract most individuals. They must be guaranteed job opportunities and essential services as well.

The task of revitalizing rural America, NRS believes, has been potentially facilitated by recent advances in communications technology. Without claiming that telecommunications can play a primary role in solving every problem associated with rural community development, it is nonetheless contended that the imaginative application of communications technology may help make non-metropolitan areas more appealing places to live and work for increasing numbers of Americans. The electronic media already perform very important entertainment and informational functions for the average person in our society. However, the potential of recent communications innovations in other areas has scarcely been realized. Establishment of technically and economically viable communications links within and between communities can

substantially mitigate the economic and cultural disadvantages that rural communities frequently suffer as a consequence of geographic isolation. The delivery of health care and other vital social services to people in large sparsely populated regions can be markedly improved by communications technology. Community life may also be strengthened if modern communications facilities are used to stimulate increased and broadened public participation in local affairs.

The NRS has chosen to focus on five areas which it considers critical to the development of viable rural communities and where it believes that communications can make an important contribution. Specifically these five areas are: 1)employment; 2)human services and health care; 3)continuing education and vocational training; 4)entertainment and cultural offerings; and 5)community integration.

1. Employment

The proportion of the American labor force engaged in agriculture and non-farm laboring jobs has declined sharply over the last 50 years as the economy has shifted from goods to service production. Meanwhile the numbers employed as professionals and clerical workers has increased during this period in both relative and absolute terms. Manufacturing has declined as a source of employment while government's role as a direct and indirect employer has grown rapidly. These major changes

in the industrial structure and occupational distribution inevitably influence the economic development of rural communities. Non-agricultural service industries, as well as government, may be expected to provide jobs needed to support a viable rural community. These employment opportunities would need to be made available to individuals of both sexes having different levels of skills and education.

The central thrust of the NRS project in its initial phase of activity (1972-1975) has been job creation. This flows from the belief that the creation of employment opportunities in rural communities will be the primary factor determining whether these towns can retain people who might otherwise have left and attract new residents from congested urban areas.

Getting an urban industry to consider relocating or decentralizing to a rural area frequently involves assuring the organization that such a move will result in a more cost-effective operation. Organizations are often concerned that relocation may raise the cost of their communication activities, consume more employee time, cause delays or even the loss of some essential contacts. It is the contention of NRS that these problems may be overcome in most cases by proper planning and the imaginative application of existing telecommunications techniques.

In an effort to provide a basis for this planning, NRS recently developed and tested a communications audit technique in the state of Connecticut's criminal justice agencies.[20] The purpose of such a communications audit is to establish the internal and external communications processes and requirements of an organization in order to show how reliance upon travel and costly communications systems might be minimized. Once an organization's communications patterns are known, it becomes possible to recommend changes that would make them more effective and to identify those organizational components which could be relocated most easily to a rural area by virtue of their communications requirements.

Yet another effort has been devoted to the design of an electronic system that could serve as a satisfactory alternative to face-to-face business conferences in an organization that decides to decentralize. A field trial of an NRS audio teleconferencing system in the Union Trust Bank of Connecticut showed the system to be an acceptable, well-utilized technique for conducting meetings between bank executives in two cities. Moreover it was judged to be a favorable alternative to travel for most

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[20] "Office Communications Analysis of the Motor Vehicle Department of the State of Connecticut," New Rural Society Project, 1975; and "Office Communications Analysis of the Corrections Department of the State of Connecticut," New Rural Society Project (forthcoming).

meetings. The monthly costs associated with teleconferencing (that is, depreciation of equipment and monthly charges for telephone lines), were but 50 percent of what the Bank would have had to spend for transportation and executive travel time if the same number of meetings had been conducted on a face-to-face basis.[21] Finally, the ultimate affirmation of the system's usefulness came from Union Trust itself which elected to purchase the teleconference system after the field trial ended rather than lose its benefits.

2. Human Services and Health Care

Access to essential health care services is commonly not available to rural community residents. A recent survey found that one-third of all rural and small town respondents ranked health problems on a par with, or even slightly above, income as their primary personal concern (see Table 10, page 35). Moreover having an adequate income does not guarantee residents of sparsely populated rural areas the delivery of medical services.

In recent years increasing numbers of doctors have chosen to work in research laboratories, industry, public health, and other institutions, to join academic faculties, or to serve as hospital administrators.

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[21] Joseph F. Tomey, et al. "The Field Trial of Audio Conferencing with the Union Trust Company," (Washington: HUD, 1974).

TABLE 10

Percentage of Respondents Mentioning Selected Personal Concerns by Type of Residence

Mentioned as either first or second concern[a]	Type of Residence			
	Rural farm (n=142)	Rural Nonfarm (n=390)	Isolated town (n=326)	Semiclose town (n=226)
Health needs and problems	35	32	34	34
Income needs and problems	33	31	34	31
Employment needs and problems	9	5	7	6
Need for more or better housing	1	3	3	5

[a]The question asked was: "When you think of your own situation and that of your family, what problem concerns you most?"

SOURCE: National Opinion Research Center, Survey 401S, conducted in the spring of 1967. Sample was NORC's standard national sample, supplemented by 1,000 additional interviews in 47 localities with population of less than 50,000.

NOTE: These figures are tentative and subject to minor revisions.

About one-third of all U.S. doctors now devote themselves to such pursuits. Thus the availability of the physician who meets the total primary care needs of patients on a continuing basis has been diminishing nationally.

The disparity between the availability of medical services in urban areas (excluding the ghettos) and rural areas is considerable. Physicians tend to settle in urban or suburban areas because their families---like three-quarters of the American population---prefer the amenities offered by a metropolitan area. Moreover physicians find that metropolitan hospital facilities furnish them greater professional stimulation.

These two trends---toward increasing specialization and toward the concentration of doctors in metropolitan areas---have served to deprive many rural community residents of adequate health care. Although "the total number of U.S. physicians has increased 28 percent during the past decade, the proportion in general practice has dwindled sharply, and many rural areas have lost nearby medical service entirely. The doctor-population ratio of one per 500 in New York state is almost three times that of mostly rural South Dakota."[22]

However use of ratios alone, does not provide an adequate measure of either the quality or quantity of American health care. For instance, in 1973 there were 138 counties in the country which had no active

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[22]Jonathan Spivak, "Federal Project Eases Rural Doctor Shortage By Dispatching New Medical-School Graduates," The Wall Street Journal, November 19, 1974.

physicians in patient care. This meant that states such as Missouri, Nebraska, Georgia, South Dakota, and Texas each had more than a dozen counties without any practicing doctors.

Because access to health care services in rural sections of the country tends to be extremely poor, another focus of NRS activity has been to improve the quality of services in these areas. It is believed that the most effective approach to good care and effective cost control is through a comprehensive systems approach, which means that the health care system must be looked at and planned for as a whole. Emphasis must be on prevention, early diagnosis, and on less costly care, rather than on the current approach of forcing many people into hospital and nursing home care. In addition, people need to be continually educated in order to be able to assess their needs, and be able to respond intelligently when a problem occurs.

The NRS proposal for northeastern Connecticut envisions an integrated operation of the existing medical resources in the area selected, along with the technical and systems development expertise of NRS. In addition, we propose to bring health services near to people where they live, work, or learn, and thereby bring relief to the physicians and hospital. The use of physician's assistants will be an essential element of the program. It is also proposed to use a vehicle called a medibus, provided with certain diagnostic and communications equipment and possibly a portable X-Ray unit, to deliver

medical services on a regular basis to the some 50 percent of the people in the region who do not have a personal physician.

It is crucial to this program that health education be offered to the residents of the community and professional learning opportunities be provided to physicians.

Beyond this, it is also important to the well-being of the rural population that their educational needs not be ignored and that increased efforts be made in this area so that rural residents will have greater opportunity to pursue meaningful and productive lives outside metropolitan areas.

3. Continuing Education and Vocational Training

The demand for continuing, vocational, and higher education has to be met in order to satisfy the personal and job-related needs of rural community residents. Educational attainment in rural areas is considerably below that in metropolitan areas. Insofar as the demand for large numbers of low-skilled workers is declining, many rural community workers will need additional training in order to compete in the labor market. As one development specialist has noted: "Investments in physical capital are likely to be abortive unless they are accompanied by substantial investments in. . .the education, training, and mobility of workers who must combine with physical resources to produce regional growth.[23]

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[23] Gerald G. Somers, "Retraining and Migration as Factors in Regional Economic Development," U.S. Department of Commerce (1966), p. 31.

Rural community labor markets tend to demand a limited range of skills. Thus job applicants who do not qualify for positions available may fail to benefit from the economic development taking place in their locality because they have no opportunity to acquire the necessary credentials.

Programs aimed at developing rural manpower resources are crucial if adults with family responsibilities are to find good jobs in the industries that are increasingly electing to locate in nonmetropolitan areas. One of the characteristics of rural labor markets is their "thinness".[24] In other words they tend to demand a limited range of skills. A city, by contrast, employs people with a wide variety of specializations. Workers in rural communities, thus, sometimes find themselves in jobs which require far less than they are capable of contributing. If they fail to land a job in their specialty, that frequently means that they forego the opportunity once and for all to secure a position with a promising career potential. Rural workers seldom have an opportunity to acquire the additional education that would qualify them for the best local jobs. Few small towns have adequate adult

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[24] Dale E. Hathaway, "Some Special Characteristics of Rural Areas," Labor Market Information in Rural Areas (East Lansing: Center for Rural Manpower and Public Affairs, 1972), pp. 8-9.

education programs. And without these, the average head of family is likely to be hard pressed to both support a family and commute to classes in another town.

If the employability of rural residents is to improve, new training strategies appear indicated. Especially in a technological age, adults need access to recurrent education to overcome skill obsolescence and to advance professionally. Part-time study opportunities are largely unavailable to the rural community resident. Often there is no college or university within a reasonable commuting distance. Moreover, if the institutions in the vicinity are not state-supported, tuition fees can present a formidable barrier to the average rural resident whose income is small and whose job seldom allows him to attend classes on an employee-sponsored program.

New communications developments could facilitate the establishment of satellite campuses and the delivery of vocational programs. Those communities that train skilled labor pools would not only stand a better chance of placing their residents in good jobs, but also by virtue of their quality labor force be more apt to attract new industries.

In addition to offering rural residents an opportunity to improve their marketable skills, non-traditional learning centers would provide non-occupational courses that could enrich people's lives and contribute to their sense of self-esteem. American colleges and universities are gradually coming to recognize the largely unfulfilled educational responsibility they have with respect to this country's adult population.

If the majority of these institutions are to continue to rely upon public monies for support, they need to make a greater effort to serve the entire citizenry---young and old alike. The idea that higher education is acquired only in one's youth must be abandoned. People of all ages can benefit from learning and discussing together. Thus, what institutions need to develop in the future are lifetime learning programs.

There are a number of new communications advances that would contribute to the development of human resources in rural America. However, these need not be used exclusively to serve educational programs. These new technologies may also furnish the means for supplementing the meager selection of cultural offerings available in the typical small town.

4. Entertainment and Cultural Offerings

Rural community life can have a certain sameness. The variety of cultural and entertainment offerings, activities, and consumer opportunities taken for granted by urban dwellers are generally in short supply in non-metropolitan areas. Live theater, major symphony concerts, professional sports, first-run movies, a wide choice of television and radio programs and a broad range of shopping opportunities are found only in urban areas where the population is large enough to support such enterprises. These need to be made accessible to residents of rural communities, possibly through some alternative mode.

As part of the 1974 NASA-NAE summer study, this problem was examined and it was concluded that satellites could effectively deliver a broad range of cultural and entertainment programs to virtually every home in America.[25] A pair of special communications satellites in synchronous orbit over the equator would cover the entire United States. These spacecraft could bring viewers five national channels, eight regional channels, and a high resolution color channel for major sports, political, or cultural events on theater-size screens. It is estimated that a single pair of satellites would cost around $240 million. Subsequently, more satellites could be added and the system's capacity expanded accordingly.

5. Community Integration

The separation of job from residence, together with other aspects of suburban living, has made it difficult to realize a high degree of community integration. The average individual today moves around more than ever before and tends to play a number of roles. Under these circumstances, different communities may be appropriate for different roles in which an individual is involved.[26] This makes it difficult to define the term community precisely. A definition that would probably prove acceptable to most scholars, however, is the

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[25] At this time, it is uncertain whether the satellite system described above would be able initially to also cover Alaska.

[26] Talcott Parsons, "The Principal Structures of Community," Perspectives on the American Community.

following: "A community consists of persons in social interaction within a geographic area and having one or more additional common ties."[27]

Of late, greater attention has been focused on the interaction processes of a community. There is a sense that contemporary social organization has been destroying some of the more meaningful human associations and values that small town residents have traditionally acquired in church, family and neighborhood.[28] When people do not live and work in the same environment, they may be less inclined to involve themselves in community affairs. Similarly, working parents who travel long distances to their jobs may have very little time during the week to spend with their families. Thus, the critical role that parents are expected to play in the nurturing and transmitting of human values from generation to generation can suffer from commuting. What this suggests is that the centralization of political and economic power in large metropolises may not serve the best interests of society.

Much thought has been given to the problem of how to reclaim a sense of community. It is hypothesized by NRS that if people live and work in the same town, they are more apt to become involved in local

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[27] Harold F. Kaufman, "Toward an Interactional Conception of Community," Perspectives on the American Community, edited by Rolan L. Warren (Chicago: Rand McNally & Company, 1973), p. 62.

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[28] Robert Nisbet, "Moral Values and Community," Perspectives on the American Community, p. 87.

affairs and to develop a sense of commitment to a particular community. In addition, however, localities may need to establish a focal point for community activities in order to successfully encourage citizen participation. This has led some towns to create community centers. Generally this approach has proved most useful where activities have emerged from real needs identified by the residents of the town.

An experimental community communications center established by NRS in a northeastern Connecticut town demonstrated that valuable services could be provided by such a center. A survey of area residents after the limited pilot demonstration indicated interest was greatest in continuing education opportunities and improved delivery of public services. This coincides with the NRS view of a community communications center. Potentially, a center can foster community interaction by offering a variety of cultural and educational activities and by providing a forum for the debate of important public issues. At the same time it can use its communications capabilities to improve the delivery of human services. The very fact that the center presumably brings together under one roof diverse activities and services, permits the identification of those areas where considerable overlap exists and consolidation may be warranted, as well as those community needs which appear as yet unmet by any agency.

IV. The Potential Impact of NRS on Energy

NRS holds the view that the American rural problem is interlinked with the country's urban and energy problems. Unless the population distribution changes, the United States may never be able to realize optimum use of its energy resources.

Assuming U.S. industrial and individual energy consumption continues to climb, this could be expected to both increase the demand for energy imports and encourage expansion of domestic energy production. Because the oil crisis of 1973 demonstrated that foreign suppliers upon whom the U.S. had previously relied for 31 percent of its supplies were not dependable, considerable attention has been focused on the potential for developing existing domestic energy reserves. Until 1973, the United States had based its economy to a large extent upon the continued availability of relatively inexpensive petroleum supplies. The embargo pointed up the urgent necessity to conserve energy use and exploit alternative energy sources that would not be susceptible to foreign control and to consider more basic approaches which deal with our way of life and the utilization of our land.

High levels of energy consumption have fostered the growth of our technological civilization, but the continued growth of energy use now raises severe problems. The United States' rapid drive toward urbanization in this century has created sprawling metropolitan regions whose inhabitants are excessively dependent upon the automobiles and where power must

be produced in large plants using oil. Similarly pollution has become a problem as more and more people and industries with their energy demands have concentrated in large cities.

These factors underscore the urgency of developing a strategically sound, long-term energy program for the United States. Such a program would have to provide for the nation's energy needs over the next several decades while new methods of supplying energy are developed in an orderly, well-planned fashion to replace those based on the use of limited and non-domestic resources. Population distribution may become a key element in such a program.

While a more dispersed population distribution holds the possibility of improving the quality of life in both rural and urban America, it is likely that this same approach may contain significant implications for better energy utilization. A more decentralized population could make greater use of more abundant domestic raw materials such as coal.

Energy production for a highly urbanized population pattern necessitates the use of low-sulfur oil instead of coal to minimize pollution. Under the existing population distribution, the large metropolitan centers require huge power complexes to satisfy their electricity demand. Because of pollution, many of these plants switched from coal to oil, but some are now forced to return to coal due to the shortage and cost of suitable oil.

If a larger proportion of the population lived again in a decentralized fashion, power generation could be dispersed as well. As a result, it might be possible to use coal, the country's most abundant energy source. The resultant pollution would be more tolerable in the dispersed pattern. Further existing techniques make it more economical to remove contaminants generated in medium-sized and smaller plants. Also, substantial losses of electric power occuring in long distance power lines would be significantly reduced. Based on the foregoing considerations, high priority is given by NRS to determining the most efficient use of U.S. energy resources as a function of population distribution. The major tasks of such a study are outlined in Chapter VI of this document.

Beyond the potential advantages of basing U.S. energy production more heavily on use of coal, the NRS approach also involves two basic ways by which reduction in energy needs could be realized. In the population decentralization process envisioned by NRS, the use of telecommunication technology could make all aspects of life in small towns more attractive and permit business and government to disperse their operations from urban to rural areas. These could be the primary factors in creating growth in the rural towns. Through careful planning, homes, work places, and shopping facilities in these revitalized rural towns could be located to reduce automobile utilization and energy consumption. In addition, within and between these towns, telecommunication technology would be used

to the maximum feasible extent as an alternative for accomplishing activities that presently necessitate automobile travel. Taken together these two strategies hold the potential to eliminate certain trips and to reduce the length of others, thus diminishing energy usage.

In its first phase of activity, NRS did not concern itself in a major way with the question of energy. Because energy is now a leading national concern and because NRS believes that it is important to better understand the relationship between population distribution and energy consumption, NRS hopes to undertake a large-scale research project in this area forthwith.

V. Overall Objectives of the NRS Project

The overall goal of the New Rural Society Project (NRS) is to help solve the interdependent rural, urban and energy problems, by applications of communications technologies. To this end the following objectives are advanced in order of priority.

1. Bring about population decentralization from large urban areas to communities in rural regions.

2. Improve the quality of life in rural areas:

   - Increase employment opportunities in rural communities by facilitating the decentralization of business and government operations.
   - Improve the quality and delivery of health care in rural regions and bring health services near to where people live, work and learn.
   - Provide opportunities in rural areas for adults to pursue continuing education and vocational training.
   - Expand the entertainment and cultural opportunities for rural residents by providing an adequate choice of broadcast signals and access to special cultural programs originating outside and within the community.

3. Establish effective community planning throughout the nation so that rural development reflects the local residents' preferences.

4. Determine the impact of telecommunication and population decentralization on the nation's energy requirements to establish a strategically sound, long term energy program for the United States.

In pursuit of these general objectives, NRS has proposed specific projects which are described in the next section.

VI. Projected NRS Activities (1975-1978)-- The Start of the Implementation Phase

In its next phase of activity, NRS plans to devote its efforts to the implementation of projects which emerge naturally from previous NRS activities and build upon the findings that were obtained from this work.

The approach that NRS proposes to take in its implementation phase is a state-by-state approach. NRS will seek to develop pilot projects in a number of selected rural regions in cooperation with the appropriate state governmental agencies. It seems apparent that if the problems of rural America are to be attacked successfully, the federal government and foundations will have to provide support to the states to help stimulate and coordinate implementation programs while using as many of the states' existing resources as possible.

1. The South Dakota Teleconference Project

NRS has already begun the process of developing pilot projects with individual states. In addition to its work in Connecticut, described earlier, NRS now is discussing a possible pilot project with South Dakota. The South Dakota state planning office wishes to establish a teleconferencing system that would link it and other government agencies in the state capitol of Pierre, with their regional offices around the state. What the state hopes to gain from such a system are better governmental coordination at a lower cost and improved delivery of public services.

In conjunction with this teleconference operation NRS would undertake research on both individual and group efficiency. Efficiency may be positively related to effectiveness, but the two are not identical. Effectiveness is how well an organization attains its objectives, while efficiency is determined by the amount of resources used in attaining organizational goals. In the proposed South Dakota teleconference study, the resource is the value of time involved in having face-to-face meetings. Users will select the criteria by which they define the effectiveness of meeting activity. Using this list of criteria, they will rate both their face-to-face and teleconference meetings. When the resultant scores for effectiveness are related to the value of the resources used, then the efficiency of face-to-face and teleconferencing meetings can be compared. Once developed, this approach for measuring effectiveness and efficiency could be applied to other types of communication activity. An integral part of this research would be a determination of those factors which most affect the users' choice of a conferencing mode.

2. Employment

NRS, together with the relevant communities in a suitable test region, would design a telecommunications facilities for the region to facilitate business decentralization. Using its communications audit techniques, NRS would ascertain the communications patterns and requirements of business and industries contemplating establishing an operation in the region. NRS would suggest to the communities what type of telecommunications

facilities they ought to provide and, at the same time, show prospective employers how telecommunications could enhance their operations in a rural region. Before government or many industries will consider dispersing their jobs to rural communities, they will need to be convinced that communications can preserve the efficient functioning of their decentralized operations, on an economic basis.

3. Health Care

Creating new employment opportunities in rural areas is but one component of rural revitalization. An almost equally serious problem confronting rural residents is inadequate health care. Even if people can afford to pay for professional health care, rural areas often do not have the doctors and other health professionals who can provide essential medical services.

It is proposed to seek funding to support the implementation of a comprehensive health care plan which has been developed for Putnam, Connecticut. Under this plan, NRS would provide the Northeast section of Connecticut with assistance in planning and overall coordination, in operations research and analysis, and in technology. It is hoped that if the proposed program is successful, similar programs will be initiated throughout Connecticut and in other states.

The number of physicians practicing in the region---one family doctor per 4,000 persons---is very small and their average age is 57.

In terms of facilities, the region supports one acute care hospital, as well as two other general hospitals located on the fringe of the area. There is also a pediatrics center and two other clinics, which operate on a weekly basis and provide mental health services and tumor analysis. At present, the existing health care system in the region consists of the District Department of Health, the local hospital, the primary care physicians and the paramedical personnel, such as public health care nurses, physician assistants, etc. We propose to add to the system the residents of the region; the schools in the area; a clinic in each of the ten townships each manned by a physician's assistant; and a mobile service, called the "medibus." The following are the overall goals and basic description of the proposed new health care system:

1. Easy accessibility to services by bringing health care near to people where they live, work, or learn, thereby relieving physicians in hospitals of unnecessary burdens.

2. Home health education of the region's residents as a central ingredient of the plan.

Educational programs would be developed jointly by the local physicians, hospital staff and lay-people and transmitted by ETV and cable systems to homes or via RTS to learning centers. It is believed that such an activity would educate people about dealing with sickness and emergencies, and thereby would enable them to communicate with the physician only when essential and then with pertinent information. In this way, physicians and hospitals will be able to apply their skills and resources where the need is greatest and thus raise the general level of the population's health.

To provide medical services to those people who do not have access to them, as well as to supplement the care that is provided, it is proposed to staff and maintain a small, basic clinic in each of the ten towns. These clinics would be manned by a physician's assistant who, under the general supervision of the doctor, would carry out many of the functions and tasks that are currently the responsibility of the physician. The assistant would have easy access by telephone to the supervising doctor, located at the center, as well as to the local hospital. One telephone line would be used to transmit medical data, such as EKG, EEG, etc. as well as for facsimile.

There will be occasions when individuals are unable to obtain the needed care because of their inability to get to a physician's office, the emergency room at the hospital, or the town clinic. The elderly and physicially disabled, in particular, are likely to fall into this category. In order to make it possible for these individuals to receive health care services and also to provide the means for night visits, it is proposed that a mobile unit called a medibus be purchased and outfitted. This vehicle would be on call 24 hours a day, 7 days per week for urgent house calls. It would contain diagnostic and treatment equipment, including X-Ray.

4. Vocational Training & Continuing Education

With the current high unemployment rate, there is a crucial need for new programs aimed at attaining maximum utilization of the nation's manpower. Considerable attention has been devoted to developing employment services for urban residents, yet very little has been done to assist the unemployed and underemployed in non-metropolitan areas. As a consequence, the decentralization of industry from metropolitan to rural areas has not necessarily meant jobs for the local residents. It is estimated that only about 14 percent of the jobs resulting from the federal growth center program between 1972 and 1974 were filled by present or former residents of the redevelopment area--that is, the rural communities around the designated growth center. If the benefits of economic development of a resource-rich region are to accrue to local residents, then the latter must possess the necessary skills to qualify for the newly created jobs in their region.

Many rural workers fail to meet employer requirements because they cannot obtain the requisite specialized training locally. To demonstrate how this barrier might be overcome, it is proposed that NRS establish community learning and training centers in suitable test areas. The purpose of such centers would be to afford unskilled rural workers access to training so that they might better compete for newly created jobs in energy, manufacturing, and service industries. Centers would be equipped with recently developed educational technology and specially prepared software. For instance, a learning system developed recently

by Goldmark Communications Corporation for community colleges provides for courses to be delivered on television receivers to students in dispersed learning centers. With such a system, course material is not presented in the traditional manrer. Rather a combination of pertinent pictures, graphics and motion, where essential, are carefully synchronized with an audio narrative to form the lessons. Through such techniques, it is expected that neighborhood learning centers could provide quality vocational training and continuing education opportunities effectively and at low cost. Insofar as the center would be managed by existing educational institutions in the region, any rural town could easily establish a learning center.

5. Entertainment & Cultural Offerings

A recent study by the Denver Research Institute for the Office of Telecommunications Policy recommended that rural television service be upgraded through a combination of cable and translator systems. Making this plan work, however, would require the piecing together and coordination of innumerable private and public components. Some of these exist, but most remain to be developed. This would take time and would necessitate a revision of current FCC rules. NRS believes that in order for the federal government to be able to determine how best to provide every citizen with equivalent television service, that an alternative approach---namely satellites---first needs to be examined in depth.

Many Americans do not have access to the facilities and offerings of the country's first-rank cultural and entertainment organizations because they reside in rural America. NRS believes that it is desirable and possible to achieve a sharing of these resources through the application of space and electronics technology.

A specially designed pair of high-powered domestic communication satellites in synchronous orbit over the equator would be capable of delivering a broad range of cultural and entertainment programs to every home in America. At present there are a million households in sparsely populated areas that receive virtually no television service, another six million households that receive fewer than three channels, and there are 22 million homes which receive less than 5 channels. Cable operators consider it economically unfeasible to wire small rural communities, and even more unprofitable to attempt to establish a cable system that serves the more isolated farmers and country dwellers as well. Further, the domestic communications satellites now being launched are relatively low-powered and therefore require large, expensive earth stations. Such a satellite system can do little to upgrade rural television service because it still relies upon existing microwave and cable networks to deliver television programs to viewers.

The satellite system being proposed by NRS would utilize a new generation of satellites and would provide five national channels. It is envisioned that the three commercial networks and the Public Broadcasting Service would use four of these. A high-resolution national theater projection color

television service would be provided to all parts of the country and would be receivable with inexpensive ground equipment. The fifth national channel, combined with a reserved sixth channel, will increase the bandwidth from the standard 40 MHz to the 80 MHz required for the high-resolution signal.

In total there would be twelve 40 MHz channels provided, corresponding to a total of 480 MHz which would fit into the 500 MHz spectrum assigned for the air to ground signals in the 12 GHz band.

The satellite pair would also have eight additional, high-power regional channels and local transponders. These would be used to provide local television service to all rural areas in the United States. The satellites would serve four geographic regions, corresponding roughly to the four U.S. time zones. The number of channels apportioned to each individual region, i.e. four for the Eastern zone, two for the Middle West, one for the Rocky Mountain states; and one for the Far West---relates to the numbers of states in each zone. In other words, the Far Western region (time zone 1), which includes five states, and the Rocky Mountain region, which covers six states, would each be served by a single transponder; the Midwestern region, with fourteen states, would be served by two transponders; and the Eastern region, with twenty-three states, would be covered by four transponders.

Between 7 A.M. and 11 P.M., approximately five, half-hour broadcast time-periods would be allocated each day to every state. Thus every state

could originate its own daily program which would be received by all other states in the particular time zone.

The addition of another pair of satellites would double the Rural-Sat system's channel capacity. In order to obtain full benefit from the added regional channels for instructional purposes---especially for lifetime learning programs or vocational education---it is proposed that small learning centers be established in rural communities. These could be located almost anywhere---in churches, schools, firehouses, libraries---to provide maximum accessibility to the community residents. The regional transmitters would be utilized to transmit instructional courses during the night, when they usually would not be in service. Using the recently developed RTS system, it would be possible to transmit in a compressed manner several hundred different half-hour lessons per regional transmitter, utilizing the RTS sound and still picture type of presentation. From these transmissions, learning centers could select and store electronically lessons to be played back when needed during the daytime. Insofar as each regional transmitter serves approximately five states, each state could contribute up to 65 of its own programs per night. Thus, given sufficient program material, some 380 different lessons could be transmitted during a six-day week by each state and be received by every learning center in the region.

6. Energy

As was stressed earlier in this paper, NRS considers the energy problem as one that is directly related to this country's urban and rural problems. Thus NRS believes it is urgent to examine how different population distributions might influence the efficient use of energy in America. Accordingly the project outlined in the following is proposed.

The Most Efficient Use of U.S. Energy Resources as A Function of Greater Population Distribution

I. Broad Description of the Energy Problem in Light of Severe Time and Cost Constraints

II. Available Conventional Energy Resources For the Next 100 years.

A. Location, Amount and Accessibility of Domestic Energy Reserves

B. Cost of Extraction and Conversion

C. Environmental Constraints
1. land reclamation considerations
2. pollution considerations

III. Present and Future Projected U.S. Energy Needs, through the year 2000, (for homes, business industry, travel, and transportation)

A. Assuming the Present Population Distribution, With 75 percent in Metropolitan Areas and 25 percent in Rural Areas.

B. Assuming varying degrees of NRS population distribution up to 50 percent in Metropolitan Areas, and 50 percent in Rural Areas.

IV. Based on the above, determine the most cost effective means of supplying the energy needs under a range of population distributions assuming the maximum feasible reliance on domestic resources. Make assessments for the following conditions:

1 -the current population distribution
2 -the same projected to the year 2000
3 -varying degrees of dispersed population (as defined under III B) projected in 10 year intervals from now to year 2000.

V. In evaluating the effect of population distribution on energy utilization the following factors and their interaction will be considered.

1. The type and amount of resources used against known energy resource reserves

2. The cost of acquiring and processing the needed resources for the different population distributions (take into account construction of new extraction facilities, power plants, and material and energy distribution systems.)

3. Maintenance of acceptable pollution levels.

4. Degree of national self-sufficiency that would result from the alternative energy systems.

5. Capital requirements for conversion of existing and construction of new facilities for the different energy systems.

6. Effects of population distribution on pollution levels generated by electric power plants.

7. Effects of population distribution on pollution levels generated by automobiles and possible impact on greater fuel efficiency.

8. Environmental implications of strip mining under the various energy systems proposed above.

7. Steps Toward The Initiation of a Collaborative NRS Program with East Asian Countries

At the request of the International Christian University, members of the NRS team visited Tokyo in May 1975 to lecture on the New Rural Society project and to participate in international discussions on this subject. The purpose of the conference was to bring together individuals from Asian countries, namely, Japan, South Korea, and the Philippines, in order to discuss the problems of population in the large metropolitan areas, and to suggest alternatives for redistribution of population into smaller communities.

Remarks by most of the participants centered around economic and political strategies for altering the history of migration from the smaller rural areas to the larger cities. Because the problems in Southeast Asia are somewhat different from those in North America, such as size of country and transportation networks to name but two, the nature of the needs and their dimensions are of course different. However, Japan and the United States share many of the same problems. The Southeast Asian people have difficulty discouraging the population from coming to the city while in the United States the problem is to encourage individuals to leave the cities and settle in rural areas.

At the end of this symposium on "Urbanization, Population and Development in Asia", NRS proposed that a pilot project be undertaken in a specified rural area in each of the four countries concerned: Japan, South Korea, the Philippines and the United States, in order to apply results

of NRS studies to upgrade rural life as well as to demonstrate the value of international understanding and cooperation in areas affecting the population itself.

The objective of the plan would be to upgrade the quality of life according to five criteria:

1. Employment opportunities
2. Health services
3. Education
4. Cultural, entertainment and recreational opportunities
5. Community involvement and leadership

In each of the four countries a relationship between a rural area and an appropriately related metropolitan region would be established assuring its involvement in the rural development process.

In order for such a program to be executed successfully, it would be important to obtain from the beginning the full sanction and cooperation of the respective government and local authorities in each of the countries selected. The objectives of each of the four projects must be clearly defined, and tailored to meet the needs of the individual countries and region. The project will require interdisciplinary staffing and excellent management. The talents among the participants should represent technical, economical, and social science disciplines and must provide imaginative solutions to reach tangible and meaningful objectives within the shortest possible time.

As an overall organization it is proposed that the entire program be divided into four phases. The first phase would be for preliminary discussions and planning, starting immediately, and culminating in a meeting to be held late this year at a place to be agreed upon by the participants. At this joint meeting, it would be anticipated that funding sources from each of the participating countries for the one year-study will have been identified, which then would be the second phase.

It is estimated that a closely coordinated study by the four-country team for one year would be necessary in order to prepare for the actual implementation of the pilot operations. The results would define precisely the nature, scope and location of the four rural pilot operations together with costs, funding sources and time periods.

The Phase III would be the execution of the four parallel pilot operations, based upon the plans of Phase II.

Phase IV would be national implementation of rural programs following the results of Phase III operations.

In order to ensure the success of such a program, it must be clearly understood that each country would contribute manpower and funding so that the entire project is truly a collaborative effort. One of the organizations which funded the symposium in Japan (the Asian Foundation) expressed interest in helping support this program.